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ABSTRACT

The survey reported here of 12,008 students in 93 undergraduate Open University courses was designed to assist in Open University audiovisual policy development and planning and to provide a data base for summative evaluation of audiovisual media use in individual courses. Emphasis was on the first aim, and detailed data were collected only for 17 new courses. An introduction describes the sampling, response rate, weighted averages, and availability of survey data. Tables show student access to audiovisual equipment (television, video equipment, audiocassette equipment, and telephone), and to computers, including type of microcomputer and data storage medium. Results reported cover the use and appreciation of television and radio in foundation courses and in new courses, the role of television repeats, broadcasting versus cassette-mailing as a distribution method, use and appreciation of audio-cassettes, the cost of television, the economy of television in post-foundation courses, television versus face-to-face tutoring, television versus audio-vision, and media selection from a cost-benefit perspective. Recommendations, four references, and a list of courses covered in the survey are included. (LMM)

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AUDIO-VISUAL MEDIA IN THE OPEN UNIVERSITY RESULTS OF A SURVEY OF 93 COURSES

by
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INTRODUCTION

University-wide audio-visual media surveys were carried out in 1974 (Bates, 1975) and in 1979 (Grundin, 1980). In 1982, developments in the field of video and major changes in the broadcasting times available to the University made it seem appropriate to carry out a new, large scale survey.

The dual aim of the survey was the same as in 1979:

-- to assist policy-making and planning in the area of audio-visual media; and

-- to provide a data base for summative evaluation of the use of audio-visual media in individual courses.

Sampling

In view of the limited resources for the 1982 survey, the emphasis was primarily on the first aim, and detailed data about individual courses were only collected for the 17 new courses. (See appendix I).

For the continuing courses in 1982 student samples were about one third of what they were in the 'full-scale' survey of 1979. This means that the data are not suitable for comparisons between individual courses, but only for comparisons between groups of courses and, of course, for faculty-wide or university-wide estimates.

For new courses in 1982 full-size samples were included, so that data about the individual course (e.g. viewing rate) can be calculated with the same accuracy as in previous surveys.

The survey covers, in principle, all credit courses in the undergraduate and the CE sector, with the exclusion of courses that were in their last year of presentation in 1982. Also excluded were the priority A courses in the 1982 Video-Cassette Loan Scheme, since they were the object of a separate study in the AV Media Research Group (Brown, 1983).

Response rate

Altogether, the survey comprised samples from 93 courses totalling 12,008 students. After the usual two reminders, the second accompanied by a new copy of the questionnaire, usable responses were obtained from 9,454 students, which gives an average response rate of 78,7 per cent. The response rate is very high compared to most surveyes in the OU, although it is fractionally lower than the average for the 1979 AV Media Survey (79.8 per cent).

As in earlier surveys, the response rate varies considerably from course to course. For example, in the new courses it ranged from a high of 87 per cent (A312) to a low of 57 per cent (E354).

Weighted averages

The procdure of sampling of student-courses used means that the larger the course population the smaller the proportion of that population which is sampled. This means that low-popularion courses are over represented in the total sample. To correct this, all averages (e.g. University and faculty means) are calculated after assigning to each case (i.e. each student-course) a weight that reflects to both the size of the course population and the properties of the population that is included in the achieved sample. The resulting averages should provide the best estimates of the averages for the entire student-course population of the OU.

Availability of survey data

Like the 1979 survey, this one has yielded very large amounts of data, much of which cannot be presented in a single report. All the data are, however, available in the form of an SPSS file, on disk memory in the OU Univac computer system.

To the data derived from the questionnaire, which is shown in its entirity in appendix II, have been added various demographic data from our main student file.

In case the AV Media Research Group cannot undertake to carry out certain specific analyses (due to shortage of staff), the file can be made available to any member of OU staff who is interested in carrying out further analyses.

STUDENT ACCESS TO AUDIO-VISUAL EQUIPMENT

Table 1 summarises data on students' access to various equipment.

Television

98.5 per cent of the students have access to a television set of some kind, and 81 per cent have access to colour television. This is an increase of 1.5 percentage points in overall access, and 10 percentage points in colour television access since 1979.

42 per cent have access to a second television set, which is often black and white. (No comparison with 1979 is possible, since the question was not asked then.)

The students were asked how often the

> need to use a television set for OU work conflicts with the viewing of other members of the faimly/household.

The answers show that 96 per cent of the students rarely or never experience such conflict, and less than 2 per cent experience it frequently.

Few students have access to Oracle/Ceefax (7%) and only a minute proportion (0.1%) have access to Prestel.

Video Equipment

Just over 42 per cent of the students have access to a video-cassette player of some kind, either at home (20%) or at some other location, mainly place of work or home of friend/relative (22%). Almost three quarters of those who have access to video equipment have the VHS format, the second most common format is Betamax which accounts for some 15 per cent of all equipment.

Table 1 Details of students' access to various kinds of equipment.

Equipment	Per cent OU students with access at home	convenient access elsewhere	Total convenient access
Audio-cassette player	91.0	N/A	91.0
Telephone	93.9		93.9
Television set (any kind)	98.5		98.5
Colour television set	81.3		81.3
2nd television set	42.2		42.2
Oracle/Ceefax	7.6		7.6
Prestel	0.1		0.1
Video-cassette player (any kind)	19.7	22.4	42.1
VHS player	14.5	15.9	30.4
Video-recording possibility	19.7	15.0	34.7
Micro-computer	15.2	18.7	33.9

Notes: 'At home' includes access in any location where the student regularly does his/her OU work.

'Convenient' access means convenient according to the student's own judgement.

All students with video equipment at home, and 70 per cent of those with access to equipment elsewhere can use the equipment to make video recordings off-air. Overall, this means that 35 per cent of all students can record television programmes off-air, while another 7 per cent can play back pre-recorded video-cassettes but not make any recordings off-air.

It should be noted that sales of video equipment are still at a high level, so that by the beginning of the next year the percentage of OU students with convenient access to video equipment is likely to be further increased.

When students were asked if they would be willing to rent/purchase video equipment at their own cost, if the OU provided video material free of charge, 7 per cent said 'Yes, definitely' and 23 per cent 'Yes, probably'. If 'Yes, probably' is taken to mean at least a 50 per cent likelihood of rental/purchase, those figures would mean that 60 per cent or more of our students could have adcess to video equipment.

Audio-Cassette Equipment

91 per cent of the students have audio-cassette players. This is a modest increase since 1979 when the figure was 87 per cent. In courses which make extensive use of audio-cassettes, the access figures are close to 100 per cent. For example, in the three foundation courses M101, S101, T101 (with at least 6 cassettes each) 98 per cent of the students have audio-cassette playback equipment.

Telephone

The proportion of students with access to telephone had, by late 1982, increased to 94 per cent, a significant improvement on the 1979 figure of 89 per cent.

STUDENT ACCESS TO MICROCOMPUTERS

For the first time, the AV Media Survey Questionnaire included questions about student access to microcomputers. By November 1982, 15.2 per cent of all students had some kind of microcomputer in their own home, and another 18.7 per cent had access elsewhere (mainly at their place of work) to a microcomputer they can use for OU study purposes. That means that just over a third of OU students had access to a microcomputer by the end of last year. (The development in the field is so rapid that the figure may already be significantly higher.)

Type of Microcomputer

In the question about make/model of microcomputer, five popular micros were listed: Apple, BBC-Acorn, Commodore PET, Research Machine, Sinclair, plus as a sixth alternative 'other micro'.

3 per cent of those with micros at home, and 12 per cent of those with access to micros elsewhere did not indicate the make, perhaps because they were not sure what kind of machine it was. The following table shows the distribution of answers for those who did reply.

Type of micro	In students' homes (%)	Elsewhere (%)	All locations (%)
Sinclair	49	9	28
BBC-Acorn	17	18	17
Commodore	7	23	16
Apple	5	23	15
Research Machine	3	10	7
Other machines	19	17	18
All machines	100	100	100

Clearly, Sinclair is the 'market leader' among student-owned machines with the BBC-Acorn in second place.

In locations outside students' homes, mainly at their places of work, the Commodore PET and the Apple are equally common with the BBC-Acorn a close third.

Overall, the Sinclair machines are most common with BBC-Acorn, Commodore PET and Apple competing for second place.

It should be pointed out that the category 'other machines' may contain a number of Commodore Vic-20s, so the total number of Commodore machines to which OU students had access in November 1982 may actually have exceeded the number of BBC-Acorns.

Furthermore, each of the 'types' listed here does in fact cover more than one machine. E.g. a BBC-Acorn can be Model A or Model B, a Sinclair can be a ZX80 or a ZX81, a Research Machine can be a 380Z or a 480Z (and the latter can be part of a network with a 380Z or a 'stand-alone').

Differences among faculties

There are, as one would expect, considerable differences among faculties in terms of students' access to microcomputers. The table below shows the percentage of students in each faculty who have access at home, elsewhere or not at all.

Faculty	Access to microcomputer: At home (%)	Elsewhere (%)	No access (%)
Arts	7	10	83
Soc. Science	10	14	76
Ed. Studies	13	22	65
Maths	26	32	42
Science	19	22	59
Technology	25	24	51
P Courses	14	22	64

The variation ranges from the Maths faculty where nearly 60 per cent of the students have access to some kind of microcomputer to the Arts faculty where only one student in six has access.

The five most common machines are not always available in the same proportion in all faculties, as the following table shows, which given the relative frequency (%) of each type of micro.

Faculty	Apple	BBC-Acorn	Comm. PET	Res. Machine	Sinclair	Others
Arts	14	18	15	5	34	16
Soc. Science	19	16	13	6	31	16
Ed. Studies	13	25	13	10	29	10
Maths	14	16	16	6	28	20
Science	14	16	16	6	28	20
Technology	16	12	19	4	30	20
P Courses	12	31	12	13	27	6

It is particularly interesting that four machines (Apple, BBC-Acorn, Commodore PET and Sinclair) are about equally common among Maths students, whereas among Ed. Studies and P course students, BBC-Acorn and Sinclair are clearly dominating. Among Arts and Social Science students, finally, Sinclair micros are much more common than any other make.

It seems as if Arts and Social Sciences students not only are less likely than other students to have access to microcomputers, they also tend to have smaller and less powerful micros when they have them.

Data Storage Medium

Cassette storage is by far the most common medium. Overall, almost three quarters, of the micros have cassette storage, and just over a quarter have disk storage. This nearly always means floppy disk, since very few students have access to microcomputers with hard disk storage.

The dominance of cassette storage is even more pronounced in the case of students' own micros, as the following figures show.

	Microcomputers	
Storage medium	In studs home	Elsewhere
Cassette	95%	56%
Disk	5%	44%

There are obviously differences among types of microcomputers with regard to the storage medium used. The figures below show the percentage of each type having cassettes and disks respectively.

Type of micro	Storage medium	
	Cassette	Disk
Sinclair	97	3
BBC-Acorn	92	8
Commodore PET	68	32
Apple	46	54
Res. Machine	40	60
Others	65	35

It is quite clear that the two most common machines, Sinclair and BBC-Acorn which account for 45 per cent of all the machines, rarely have disk drives.

It should be noted that some micros may have both cassette and disk storage. Due to the way in which questionnaire answers were coded, the reply 'cassette storage' may, in fact, mean that both cassette storage and disk storage are available. Also, some students who make little or no use of the micros available to them, may not know exactly what storage media the machine in question has.

Final Comment

The survey data reported here were only intended as a first exploratory review of the rapidly changing microcomputer scene as far as OU students are concerned. Since enquiring about microcomputer access was not the sole - not even the main aim of the AV Media Survey 1982, it was not possible to probe in depth the various important issues in the microcomputer field.

It will, in my opinion, be necessary to carry out further, more in-depth studies of OU students' relations to microcomputers, but the data presented here should provide a useful first impression.

Use and Appreciation of Television in Post-Foundation Courses Generally

The overall picture of use and appreication of television in post-foundation courses in 1982 is shown in table 1, which also gives the co.responding figures for 1979 (when the previous large scale survey was carried out).

The average total viewing rate (i.e. including both broadcast and video viewing) in post-foundation courses was 60 per cent in 1982. This means that on average each student saw six out of every ten of his/her course TV programmes. This is an increase of 5 percentage points since 1979. However, the overall increase conceals a decrease in viewing of broadcasts from 54 to 52 per cent. At the same time there was a dramatic increase in the viewingof video recordings of course TV programmes, which accounts for the overall increase in viewing figures.

The increase in viewing has not been uniform across all the faculties. It has been greatest in Maths, Science and Technology, somewhat lower in Social Sciences and Ed. Studies, whereas in Arts courses there has been a slight decrease in the total viewing rate. The reason for this drop in Arts viewing seems to be that there has been a particularly great drop in broadcast viewing in that faculty (8 percentage points). In other faculties this drop has been much smaller, or, in the case of Maths, there has even been a slight increase in broadcast viewing.

Table 1: Viewing rates and television heopfulness ratings in the six faculties in 1979 and 1982 (post-foundation courses only).

	Total viewing rate		Broadcast viewing rate		Helpfulness rating	
Faculty	1979	1982	1979	1982	1979	1982
Arts	61	59	60	52	3.83	3.46
Soc. Sciences	50	54	49	49	3.37	3.25
Ed. Studies	50	53	49	46	3.43	3.26
Maths	51	58	50	52	3.49	3.15
Science	61	67	59	56	3.83	3.68
Technology	53	59	52	50	3.41	3.29
All	55	60	54	52	3.53	3.33

The average appreciation of TV programmes in post-foundation courses, as measured by helpfulness rating, was lower in 1982 than in 1979: 3.33 as against 3.53. The drop in helpfulness ratings has been greater in the Arts and Maths faculties than in the other faculties. One effect of this is that whereas in 1979 the Arts and Science faculties had the same high level of helpfulness rating (3.83), in 1982 the rating for Science is considerably higher than that for Arts: 3.68 against 3.46. And the Maths faculty now has the lowest average helpfulness rating (3.15).

The decrease in helpfulness ratings has been accompanied by an increase in the 'irrelevance index', i.e. the proportion of students who find the TV programmes 'not relevant enough'. On the average, 16 per cent of the viewers found TV irrelevant in 1982, whereas the figure was 13 per cent in 1979.

Use and Appreciation of Television in Foundation Courses

Viewing and helpfulness data for foundation courses are given in table 2, together with the corresponding figures for 1979. The average viewing figure for foundation courses is 73 per cent, which is slightly higher than the 1979 figure. As with the post-foundation courses, there has been a significant drop in broadcast viewing, which has been more than compensated for by increased video viewing.

The three courses (A101, M101, S101) that were presented in 1979 as well as in 1982 have roughly the same viewing figures in both years, whereas the courses that have been remade (D101/D102 and T100/T101) have higher figures in 1982.

The helpfulness ratings are, on the average, the same in 1982 as in 1979. There are, however, some noticeable changes in individual courses. The ratings have dropped in A101, M101 and T100/T101, whereas there has been some increase in S101 and a substantial increase in D102 (compared to D101). The Technology foundation course has significantly lower viewing rate and helpfulness rating than any of the other foundation courses. In fact, the helpfulness rating for T101 is much lower than the average for post-foundation courses.

Table 2: Viewing rates and appreciation of TV programmes in foundation courses

Faculty	Total viewing rate		Broadcast viewing rate		Helpfulness rate	
	1979	1982	1979	1982	1979	1982
Arts	70	71	68	63	3.70	3.37
Soc. Sciences*	63	74	62	69	3.30	3.77
Maths	78	76	76	68	4.00	3.77
Science	84	83	81	73	3.89	4.05
Technology*	58	63	57	54	3.29	2.94
All	71	73	69	65	3.61	3.62

*In these faculties 1979 and 1982 data do not relate to the same course, since there was a remake in the interval (D102 presented in 1982, and T101 in 1980).

Use and Appreciation of Television in New Courses

Data for individual new courses in 1982 will be presented and discussed elsewhere. This section deals with the new courses as a group.

Average total viewing rate (broadcasts and video) for the 16 new post-foundation courses in 1982 was 63 per cent, which is higher than it has been at any time since 1976 (when it was 65%).

There was only one new foundation course (D102) in 1982, and its viewing rate was 74%. This is about average for foundation courses in 1982, and only slightly lower than the viewing rates for A101 and M101 when they were first presented in 1978.

The relatively high viewing figures for the new courses in 1982 were to a large extent due to the viewing of video-recordings. Figure 1 shows the development of total viewing (broadcast + video) as well as broadcast viewing for new post-foundation courses in the period 1979-1982. The figure shows a decline in broadcast viewing in 1980, and fairly constant level since then (at around 3.3%). Video viewing however, increased gradually since 1979. The net effect was that total viewing figures were farily contant 1979-1981, and increased signiricantly in 1982.

The average helpfulness rating for new courses in 1982 was 3.40. This is, as figure 2 shows, virtually the same as in 1981, but somewhat lower than in 1980 and in 1979. The main reason for dissatisfaction with television, lack of relevance, was, however, no more common in 1982 than in 1979. In fact, in both years 16 per cent of the student viewers were dissatisfied because of what they perceived as lack of relevance.

The conclusion of this analysis is that television in new OU courses is being used more than in the last five years, thanks mainly to video-cassette viewing, but that there has been a marginal drop in the student viewers' appreciation of the television programmes in the context of their OU studies.

Figure 1: Viewing Figure for new Post-Foundation Courses 1979-82

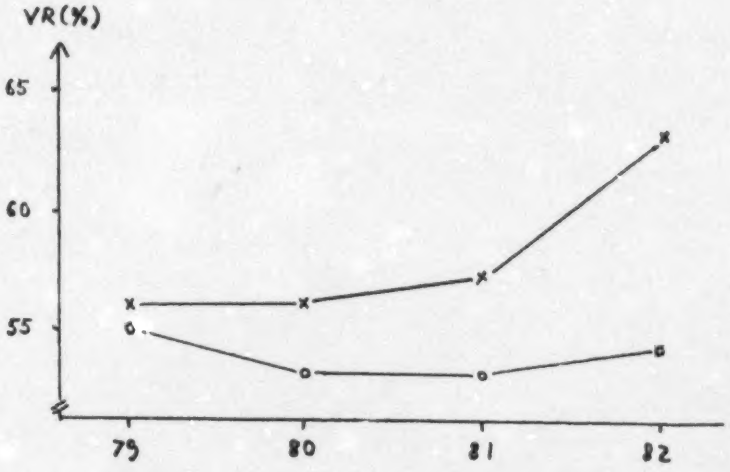
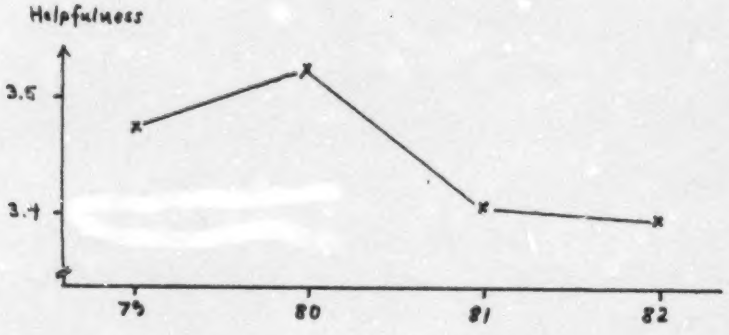


Figure 2: Helpfulness ratings for television in new post-foundation courses 1979-82



The Role of Television Repeats in the 'Video Age'

Repeat broadcasts have traditionally been regarded as highly desirable, or even necessary, in order to give a sufficiently large proportion of the target population the chance to see the broadcasts at least once. The value of a repeat broadcast does, however, depend very much on the quality of the transmission times used. It also depends on the relation between the two times used for first and second transmissions. For example, if the first transmission is on an early Monday morning, a repeat on a Friday morning is unlikely to attract many more viewers, whereas a repeat late on a Thursday night would be more successful, without in itself being a 'better quality' transmission time.

Changes over the last few years in the transmission times made available by the BBC have meant:

(a) overall deterioration in the quality of transmission time;
(b) great increase in the proportion of early morning time slots.

These two changes have combined to make repeat broadcasts much less effective then they used to be. Table 3, illustrates this trend. The average difference in broadcast viewing rate between courses with repeats and courses without repeats has been halved in five years. In the period 1976-78 this difference was 16 percentage points, in 1979 it had dropped to 13, and by 1982 it was down to only 8 percentage points.

Table 3: Broadcast Viewing Figures in courses with and without repeats 1976-1982

	1976-78	1979	1982
With repeats	65	57	53
Without repeats	49	44	45
Difference	16	13	8

Five years ago, the University had no viable alternative to repeat broadcasts when it wanted to improve the viewing figures over and above what could be achieved by single transmissions. Today the situation is different, since many students have access to video-cassette recording and playback equipment. This equipment can lead to increased viewing in two ways:

(a) allowing students to make recordings off-air (using pre-set times) and watch at more convenient times;

(b) allowing students to play back video recordings obtained through the OU, through other students, friends etc.

A comparison between courses with repeats and courses included in the Video-Cassette Loan Scheme (category A) in 1982, shows that this scheme achieved an increase in viewing figures (over and above that achieved through a single transmission) of 11 percentage points, that is considerably more than the 8 percentage points achieved through repeat broadcasts.

It is not possible to obtain exact figures for the relative cost of providing television repeats as compared to a video-cassette loan service. The best avaialable estimates suggest, however, that the average cost per new viewer per programme attracted through post-foundation course repeats is £8-10. The cost of providing a student with a returnable copy of a video recording of one TV programme is about £6, if only one programme is recorded into each cassette. If several programmes are recorded on each cassette the cost per programme can be further reduced to under £3.

Looking at the total cost rather than the unit cost, we find that the University currently spends some £400,000 per year on post-foundation course TV repeats (about 1,100 programmes). This expenditure 'buys' about 45,000 extra first-time viewings. If at least three programmes were recorded on each cassette the same number of viewings could be achieved at a cost of £150,000-175,000. Adding to this the cost of providing VCR equipment in study centres or other places where students can use it, which was about £80,000 in 1982, there would still be a potential net saving of about £150,000.

Many students make their own video recordings rather than borrowing them from the OU Audio-Visual Department. Therefore, the final saving if post-foundation course broadcast repeats are replaced by video-cassette loans is likely to be higher than the figures just quoted indicate.

Use and Appreciation of Radio in Post-Foundation Courses

Table 4 summarises data for radio in the six faculties in 1982 and in 1979 (year of the previous large scale survey).

The average total listening rate (i.e. including use of both broadcasts and recordings of broadcasts) in post-foundation courses was 49 per cent. This is an increase over the 1979 figure by 5 per centage points. The increase is, however, not uniform across faculties. There is a drop in Social Sciences listening, and no change in Science, whereas the other four faculties have increases from 3 (Ed. Studies) to 10 (Maths) percentage points.

The Arts faculty has still far higher listening rate (63%) than the other faculties (which all have rates around 43%). This means that the Arts faculty is the only faculty where, on average, a majority of the students ever hear radio broadcasts intended for them.

The figures for broadcast listening (i.e. listening to broadcast directly off the air) show that there has been no increase at all since 1979. In fact, there seems to have been a small decrease: from 37 per cent to 36 per cent. Broadcast listening is down in all faculties, except Technology where it is virtually unchanged.

It should be noted that, in 1982, all courses with radio broadcasts had repeat transmissions, whereas, in 1979, about a quarter of the courses had single transmissions only. Yet this increase in the number of transmissions has not resulted in any net increase in broadcast listening. Whatever gain in listening there might have been due to the increase in the quantity of transmission time has, obviously been offset by losses in listening due to the decrease in the quality of the times offered.

Apart from the Arts faculty, where nearly half the students hear at least one of the two transmissions of each radio programme directly when broadcast, the broadcast listening rate is about 33 per cent in most faculties. That is, the combined audience of two transmissions of each radio programme captures, on average, a direct audience of only one third of its target population.

Helpfulness ratings for radio are also given in table 4. In the 1982 survey, students were asked to rate radio broadcasts and recordings of radio broadcasts separately. The figures show very clearly that recordings of radio broadcasts are much more appreciated than are the broadcasts themselves: overall average rating of 3.59 as against 3.09. In 1979 the average rating for radio programmes (whether used as broadcasts or as recordings) was 3.45. No separate ratings for recordings were obtained in that year.

Table 4: Listening rates and radio helpfulness ratings in the six faculties in 1979 and 1982 (post-foundation courses only).

Faculty	Total listening rate 1979	Total listening rate 1982	Broadcast listening rate 1979	Broadcast listening rate 1982	Helpfulness ratings 1979	1982 (brcasts)	1982 (recrs)
Arts	59	63	49	45	3.86	3.51	3.94
Soc. Sciences	50	46	42	39	3.35	2.94	3.52
Ed. Studies	45	48	37	34	3.42	2.98	3.48
Maths	35	45	29	27	3.14	2.41	3.06
Science	42	42	35	31	3.29	2.70	2.97
Technology	38	44	32	33	3.15	2.85	3.27
All	44	49	37	36	3.45	3.09	3.59

Note: In the 1982 data, two courses with one programme each (D207, SD286) have been excluded.

Comparing appreciation figures for radio and television (table 2), we find that while radio broadcasts are rated significantly lower than television broadcasts, recordings of radio broadcasts are rated much more highly than television broadcasts.

It seems that readily available material in the less 'attractive' medium, i.e. recordings of radio programmes, is, in balance, appreciated more by the students than is less readily available material in the more 'attractive' medium, i.e. television broadcasts.

Since over 90 per cent of all students have audio-cassette players, and the rest could acquire them at a modest cost, it seems obvious that there is no justification for using radio broadcasts as an instructional medium. Radio broadcasting can only be justifi .s a low cost means of distributing audio material to large numbers of students. But whenever, for the sake of economy, audio material is broadcast rather than distributed directly on audio-cassettes, students should be advised to record the material and use the recording rather than the broadcast itself in their studies.

Use and Appreciation of Radio in Foundation Courses

The overall picture of use and appreciation of radio in foundation courses is given in table 5. Average total listening rate (including the use of recordings) in 1982 was 51 per cent, which represents a marginal increase over the 1979 figure (49%).

The Maths, Science and Technology foundation courses have higher listening figures than they had in 1979, although it should be noted that the 1979 figures for these courses were very low (an average of only 41%).

The Arts and Social Sciences foundation courses have both lower listening rates in 1982 than in 1979. The introduction of a new Social Sciences course in 1982 (D102) did not halt this downward trend.

Broadcast listening is, overall, the same in 1982 as in 1979, that is 42 per cent. Again, there has been increases in Maths, Science and Technology and decreases in Arts and Social Sciences.

The Arts foundation course, A101, has still the highest listening figure of all the foundation courses, but the difference between A101 and the others is greatly reduced.

The helpfulness ratings for radio in 1982 foundation courses suggest that there has been a decline in student appreciation since 1979. This decline is particularly noticeable in Arts and Maths. The average foundation course helpfulness rating for radio broadcasts is as low as 2.97, and the average rating for recordings of radio broadcasts is 3.20. Both of these figures are lower than the 1979 average rating for foundation course radio programmes: 3.34.

The figure discussed here suggests that continued use of radio in its present form is justified in only one of the five foundation courses, namely A101, where well over half the students still hear the programmes and where the level of appreciation for radio is similar to that of other components in the course - and even higher than it is for television. In other four foundation courses (D102, M101, S101, T101) the latest increase in listening figures, still leaves an average listening rate of only half the target population if the use of recording is included - and only some 40 per cent listen to the broadcasts directly. Furthermore, helpfulness ratings around or below the 3.0 mark indicate that only a minority of those who do listen find these radio programmes helpful to them in their studies.

Table 5: Listening rates and radio helpfulness ratings in foundation courses

Faculty	Total listening rate 1979	Total listening rate 1982	Broadcast listening rate 1979	Broadcast listening rate 1982	Helpfulness rating 1979	Helpfulness rating 1982 (brcasts)	Helpfulness rating 1979 (recrs)
Arts	65	60	56	49	3.72	3.42	3.59
Soc. Sciences	55	51	48	42	3.27	3.06	3.34
Maths	38	42	32	35	3.62	2.96	3.03
Science	44	49	36	39	3.09	2.74	2.90
Technology	42	52	36	41	2.98	2.47	2.85
All	49	51	42	42	3.34	2.97	3.20

Use and Appreciation of Radio in New Courses

Data for individual new courses in 1982 will be presented elsewhere. This section deals with radio in new courses as a group.

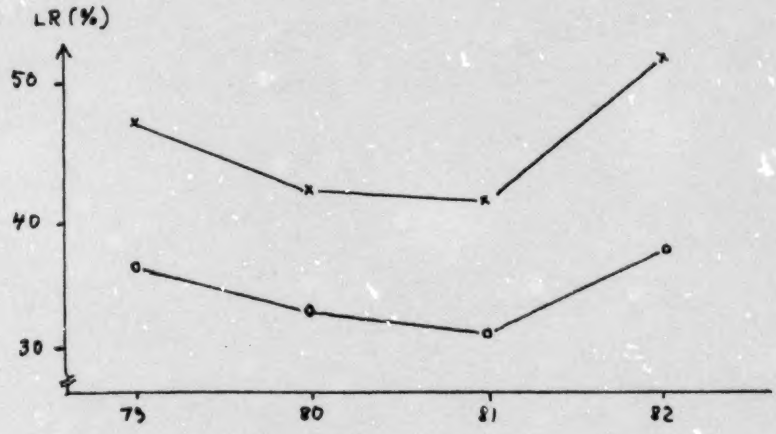
Average total listening rate (including the use of recordings) for the six new post-foundation courses with radio was 52 per cent, which is higher than at any time in the last five years.

The one new foundation course in 1982, D102, had a listening rate of 51 per cent, which is average for foundation courses in the period 1979-82. Compared to other foundation courses in their first year, it is lower than A101 in 1978 (72%) and T101 in 1980 (55%), but higher than A101 in 1978 (36%).

Figure 3 shows the development of listening figures in new post-foundation courses in the period 1979 to 1982. After a decline in total listening as well as broadcast listening in 1980-81, the 1982 figures show an increase to a level slightly higher than in 1979.

Appreciation of radio broadcasts in new courses as measured by helpfulness ratings, is fairly low. The average for new post-foundation courses in 1982 is 3.03, and the rating for the new foundation course, D102, is very similar at 3.06. When students are asked to rate the helpfulness of recordings of radio broadcasts, the picture is quite different: the average for the post-foundation courses is 3.48 and the rating for D102 is 3.34. Figure 4 shows average helpfulness ratings for radio in new post-foundation courses 1979-82. Apart from unusually high ratings in 1981, the general trend seems to be one of fairly constant appreciation of radio in new courses over this period.

Figure 3: Listening figures for new post-foundation courses 1979-82



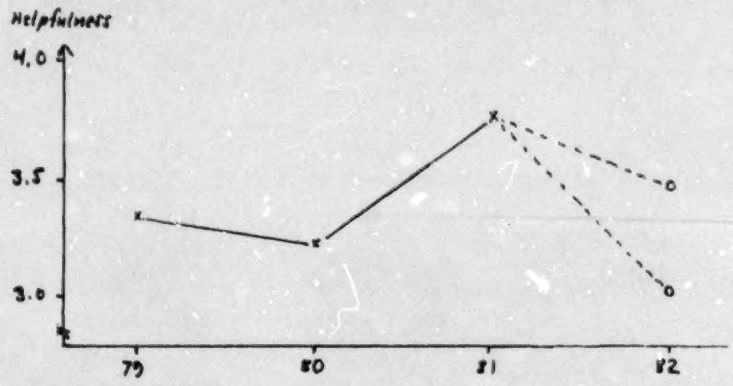


Figure 4: Helpfulness ratings for radio in new post-foundation courses 1979-82

Broadcasting or Cassette-Mailing as means of Distribution

I have already pointed out that there seems to be little justification, in most courses, for radio broadcasting as an instructional medium. This leaves us with the question of when, if at all, radio broadcasting is a suitable means of distributing audio material to OU students.

Audio-cassette recordings are widely used by students, and they function, to some extent, as a substitute for broadcasts, and to some extent as a complement. Overall, the recording listening rate is 23 per cent compared to an average broadcast listening rate of 36 per cent. (The two add up to more than the total listening rate of 49% because many students hear both a broadcast and a recording of the same programme.) In other words, about 4 out of every 10 radio programme 'hearings' are achieved through the use of a recording, either one made by the student or one obtained through the University, through friends etc.

As has been pointed out in an earlier section of this report, the helpfulness ratings for recordings of radio broadcasts are much higher than those for the broadcasts themselves: overall average of 3.6 as against 3.1. The ratings for directly mailed audio-cassettes are, on average, very similar to those for recordings of broadcasts: 3.5.

The average use rate of directly-mailed audio-cassettes in post-foundation courses is 83 per cent, that is 34 percentage points higher than the equivalent 'use rate' (i.e. total listening rate) for radio broadcasts.

It is clear, then, that although the use of recordings of radio broadcasts adds significantly to the total use made of these broadcasts, directly mailed audio-cassettes are likely to achieve a much higher 'coverage' than broadcasts supported by recordings. In fact, for every 100 students who make use of a radio broadcast (directly or through a cassette recording) one could expect 160 students to make use of the same material if it were distributed through cassette-mailong to all students.

Under these circumstances the only justification for broadcasting would be an economic one. That is, if the cost per student user of a given programme or 'package' of material were lower for broadcasting than for cassette-mailing.

According to Bates et al (1982) the cost of audio-cassette distribution is lower than that of broadcasting as long as there are no more than 900 students in a course. However, this comparison did not take into account the much higher efficiency of cassette mailing. For example, if three radio programmes are broadcast twice to 900 students, one can expect 450 listeners for each programme. But for the same cost one can send a cassette with the three programmes to 900 students and expect to get 750 listeners for each programme.

In terms of cost per student user we find that cassette mailing is cheaper than broadcasting as long as the student population is under 1,500.

In 1983 there has been a great reduction in the number of courses with radio broadcasts. However, there are still 32 post-foundation courses with radio broadcasts, with the following population sizes:

Population	No. of courses with radio
1500	3
900-1500	4
900	25

We can see that in 25 out of the 32 courses, cassette mailing would lead to both lower total distribution cost and substantially lower cost per student user of the material. The 4 courses (population 900-1500), cassette-mailing would lead to somewhat higher total distribution cost but lower cost per student user. Finally, in only 3 of the 32 courses does continued broadcasting lead to both lower total distribution cost and lower cost per student user of the material.

It must be noted, though, that in all these 32 courses, a switch to cassette mailing would lead to a substantial increase in the number of students using the material in question. And the same is true of the five foundation courses. In other words, in large population courses (1500+) the overall cost of distributing audio material can be kept low only through a policy which deliberately holds the proportion of students using the material down to 50-60 per cent instead of the 80-90 that could be achieved - at a higher cost - through cassette mailing.

To argue for continued radio broadcasting in large population courses amounts, in fact, to saying that the University cannot afford to distribute efficiently the material it produces for its students.

It should be noted that to abandon radio broadcasting in favour of cassette mailing in all post-foundation courses would not entail any increased costs, since the increased cost for a handful of large population courses is more than offset by savings on courses with less than 900 students. And yet such a simple change could be estimated to increase the number of students 'hearings' of radio programmes in the 32 courses in question by about 100,000: from around 150,000 to around 250,000.

To switch from radio broadcasting to cassette mailing in the five foundation courses would entail increased costs of £71,000, but the net effect would probably be around 200,000 extra student 'hearings' of individual programmes. That is, the extra cost would only be £0.36 per additional student 'programme hearing'.

Use and Appreciation of Audio-Cassettes

In this context, audio-cassettes refers only to cassettes which are mailed directly to students as part of their course materials. In most 1982 courses these audio-cassettes contained specially produced material that was never intended for broadcasting, but in some cases the audio-cassettes contain material originally produced as radio programmes. In 1983 the latter kind of audio-cassettes have become much more common due to a large scale switch from radio broadcasting to cassette mailing.

Data on use and appreciation of audio-cassettes in 1982 are given in table 6, which summarises feedback for 53 different post-foundation courses in the six faculties. The number of cassettes in each course varies from one only (A241, A293, AD208, D204, DE206, E202) to nine (S354). On the average, these courses have 3.5 audio-cassettes each. Maths and Science courses have the highest number (5 cassettes per course on average), whereas Arts, Social Sciences and Technology courses typically, have 3 cassettes each, and Ed. Studies courses only 2.

The 'use rate', i.e. the percentage of the students using each cassette, on average, is 83 per cent across all courses. Use rates for individual courses vary from 100 per cent (D204, E202) to as little as 21 per cent (DE206). The use rate is highest in Science and Technology (88 and 85% respectively, and lowest in Social Sciences and Maths (80 and 79% respectively), with Arts (82%) and Ed. Studies (83%) being very close to the overall average.

The 'repeat use rate' i.e. the average percentage of the students listening to each cassette more than once is 50 per cent across all the courses surveyed. The repeat use rate is highest in Arts and Ed. Studies (64 and 65% respectively), where there are relatively few cassettes in each course and lowest in Maths (35%) where there are over five cassettes per course, on average.

The estimated amount of time students spend on audio-cassettes (including accompanying notes and visuals, if any) is also indicated in table 6. On the average, students in courses with audio-cassettes claim that they spend just over 8 hours on them, that is 2.4 hours per cassette. Given that most audio-cassettes are C60s this means that the ratio of student study time to cassette playback time is roughly 2.5, i.e. 2½ hours work per C60 cassette.

It should be noted, however, that average study time per cassette can vary greatly, from as much as 6 hours (a single cassette in A293) to under 1 hours (M335 with 8 cassettes). Obviously, the nature and perceived importance of this material will affect the study, but if this is also affected by the number of cassettes in the course. The figures below show how average study time per cassette varies with the number of audio-cassettes in the course:

No. of cassettes	Average study time
1-2	3.0
3-4	2.4
5-6	1.8
7-9	1.5

Table 6: Use and appreciation of audio-cassettes in the six faculties in 1982

Faculty	No. of courses[1]	Mean no. of cassettes per course	Use rate	Re-use rate[2]	Hours spent on cassettes	Av. hours spent on each cassette	Helpfulness a-cass.	Helpfulness a-vision	'Demand index'[3]
Arts	6	2.8	82	64	7.5	2.7	3.63	3.74	+.12
Soc. Sciences	14	3.6	80	54	8.0	2.2	3.39	3.43	-.39
Ed. Studies	3	1.7	83	65	3.3	1.9	3.41	-	+.26
Maths	7	5.3	79	35	8.8	1.7	3.48	3.63	-.31
Science	14	4.5	88	50	8.8	2.0	3.48	3.76	-.04
Technology	9	3.3	85	50	7.5	2.3	3.34	3.59	-.09
All faculties	53	3.5	83	50	8.2	2.4	3.52	3.63	-.10

[1] I.e. number of courses with audio-cassettes

[2] Proportion of cassettes played more than once

[3] Demand is measured in scale from -2 ('want much less') to +2 ('want much more')

When there are only one or two audio-cassettes in a course, students tend to spend twice as much time on each cassette as when there are seven or more cassettes. This seems to suggest that a large number of cassettes increases the likelihood of the course being overloaded. It also shows that students tend to counteract overloading in terms of the amount of material presented by spending less time on each unit of material.

If we compare study times for audio-cassettes with the estimates of time spent on television, we find that the average post-foundation course student spends more time on audio-cassettes and related notes and visuals than on television: about 8¼ hours per year as compared to about 6¼ hours. Both of these media do, however, account for a very small proportion of the total study time for our students. In fact, the time spent on the three AV media, television, radio and audio-cassettes, typically amounts to less than 5 per cent of the total study time for a post-foundation course student.

Student appreciation of audio-cassettes depends to some extent on whether or not there is an element of audio-vision (i.e. whether the cassette is accompanied by visuals of some kind). Average helpfulness ratings for audio-casssettes only is 3.52 and for audio-vision 3.63. These averages do, of course, conceal considerable differences among courses, with values varying from 4.36 (S0286) to 2.18 (SM352).

Audio-cassettes without visuals are generally most appreciated in Arts, Social Sciences and Ed. Studies courses, and least appreciated in Technology courses. Audio-vision is most highly rated in Arts and Science courses, and least in Social Sciences courses.

Audio-cassettes have higher helpfulness ratings than both radio broadcasts and television broadcasts: overall average around 3.6 as against 3.1 and 3.3 respectively. However, the average helpfulness rating for cassette recordings of radio broadcasts is virtually the same as for purpose-made audio-cassettes. It seems then, as if the full potential of purpose-made cassettes has not been realised in many of our courses. This is further emphasised of the helpfulness ratings for audio-cassettes are compared to those typically obtained for the purpose-made printed material, i.e. text units, which have ratings around 4.5 (rarely below 4.0 and sometimes as high as 4.8).

Clearly, many OU students are yet to be convinced that AV material can be as valuable to them in their studies as printed material. Whether this reflects student prejudices about AV media, more than failure of some course teams to realise the full potential of these media, cannot be determined on the basis of the data collected in this survey.

Students were asked to indicate whether they wanted more or less of various media, including audio-cassettes. The replies indicate that the rapidly increasing use of cassettes in the courses has led to a situation where most students feel they have as much as they will ever want of this particular medium. In Arts and Ed. Studies courses with relatively few cassettes, student opinion is, on balance, in favour of some increase in the use of audio-cassettes. In all the other faculties, however, most students would prefer the amount of cassette material to be unchanged or even somewhat reduced.

It must be noted, though, that many students may perceive the amount of printed material in text units as 'non-negotiable' in which case the only way to achieve an overall reduction in workload would be to reduce the use of other media, which may be perceived as more 'peripheral'.

The Cost of Television

The total cost to the University of the BBC-OUP Centre, is £9.98 million in the 1983 budget (App. 4 to Senate minutes, S/74/14). It is estimated that 90 per cent of this sum is spent on television (including video) and the remaining 10 per cent on radio and audio-cassettes. A breakdown of the total budget has been provided by the BBC-OUP in 'Revised Estimates for 1983/84'. (This revision adds up to 2% more than the current 1983 budget, but the relative cost for various items in the BBC budget can easily be calculated by subtracting 2% from each of the sums in the revised estimate.) The following figures can be derived from the budget breakdown, on these assumptions (about the television's share of total cost etc):

	£ million
Total television production costs (incl. VAT)	6.48
Total television transmission costs (incl. VAT)	0.91
Total indirect/overhead costs (incl. VAT)	1.61
Sum	9.00

If the indirect or overhead costs are apportioned to production and transmission costs respectively in the same proportion as the direct costs, we get the following breakdown for television:

Total production costs	£7.89 million
Total transmission costs	£1.11 million

The 1983 BBC-OUP budget allows for the production of 230 television programmes (or programme equivalents in the case of video). This means that the total production cost per programme equivalent is £7.89 million / 230, i.e. £34,300. Since each programme equivalent is 25 minutes playback time, this puts the total production cost per hour of television or video material at £82,300.

The cost of the BBC-OUP Centre does not reflect the full cost of producing broadcasts, since a certain amount of academic staff time is involved. However, since no reliable estimate for this cost exists and since it is likely to be small compared to the BBC cost of £82,300 per television hour, this cost has been ignored in these calculations.

The transmission costs of £1.11 million pays for the broadcasting of 1506 programmes, 86.5% of which are broadcast twice and 13.5% once only. This gives an average cost per programme of £737, and per transmission of £395, inclusive of VAT and of a 'fair share' of the indirect/overhead costs of BBC-OUP.

Television broadcasting is different from many other OU media (e.g. print and audio-cassettes) in that the marginal cost increased by additional users is absolutely nil across the entire range of OU course populations. To provide a television broadcast for one student costs exactly the same as providing it for 10,000 students. Consequently, the cost-effectiveness of this medium is even more sensitive to variations in the course population than, say print where there is some extra cost incurred for each new student in a course.

To produce a television programme and broadcast it twice a year for six years, costs £6,500 per year. The annual cost per student per programme per year varies from less than £1 in A101 (over 6,500 students) to £59 in a course like E353 (110 studs). In a typical post-foundation course with 500

students the cost is £13 per student per television programme per year.

If we look at the cost per user (i.e. taking actual viewing rates into account), we find that the range is from about £1.40 in A101 (viewing rate 71%) to £125 in E353 (viewing rate 47%).

A high cost per student (or per user) is not necessarily an argument against any particular medium. It may, in fact, primarily be an argument against low population courses, since most media used by the OU become expensive when student numbers are low. However, when the cost per student is very high for any particular medium it does become important to look at alternative uses of the resources in question.

For example, given that the annual cost of providing 8 television programmes in E353 'Society, Education and the State' is about £470 per student per year, it is conceivable that there are ways of using such a sum which would be more beneficial to the students of this course. Alternatively, similar material might be provided at a much lower cost with only a marginal loss in benefit to the students (e.g. through audio-vision).

The Economy of Television in Post-Foundation Courses

There are, on average, 17.25 television programmes per post-foundation FCE. Allowing 5 minutes 'preparation time' for each 25-minute programme this gives 8.6 hours of television material per FCE. (Time spent on broadcast notes is not taken into account since the cost of producing and distributing these notes is not included in the BBC-OUP budget.) Given the rate of broadcast viewing and re-viewing the average student spends only some 5 hours per year per FCE on broadcasts. The fairly widespread use of video increases that figures to 6.2 hours per year per FCE. With a total expected study time of 420-450 hours per FCE this means that television accounts for only 1.5 per cent of the study time.

The cost of television is, however, over 13 per cent of the total cost of producing and presenting courses for OU students (the BBC-OUP budget is 14.4% of total OU expenditure in 1983). The costs of other components or services in OU courses are much more difficult to assess, but it is worth noting that if the average cost per 'student-medium contact hour' (SMC hour) were as high for all other components as it is for television, the total cost of producing and presenting 41,000 student FCEs at post-foundation level would be around £450 million per year, that is seven times the current budget for the entire University.

The cost of providing 17.25 television programmes per post-foundation FCE is £112,000 per year in 1983 prices. On average, this yields 3,250 student television contact hours per FCE, at a cost of just over £34 per student hour.

It is extremely difficult to judge whether a cost of £34 per student-medium contact hour is too high. It all depends on what value can be put on the benefit students derive from television, and on what alternative uses there are for the resources in question.

Television Versus face-to-face Tuition

In view of the estimated £34 expenditure per student-television contact hour, it is interesting to note that the direct cost (fee plus average expenses) of a part-time tutor providing one hour of face-to-face tuition is currently just over £18. To this, must of course be added costs for tutor recruitment training and management plus administrative costs. On the other hand, each tutor hour normally generates several student-tutor contact hours (how many depends, of course, on the actual groups size).

This comparison of the cost per SMC (student-medium contact) hour for television as against face-to-face tuition in post-foundation courses is highly tentative, but it does suggest that the 'mass medium' (i.e. television) may be more expensive than the 'small group medium' (i.e. face-to-face tuition).

We cannot measure directly the benefit students derive from an hour of television as compared to one hour of face-to-face tuition. Feedback from students indicates that tuition is perceived as more 'helpful' than television, although both these media are rated much below the printed course material in this respect. For new courses 1980-82 the mean rating was 4.62 for text units, 3.68 for study-centre tutorials (3.79 for day schools) and 3.46 for television.

Feedback for new courses in 1982 shows that most students want more face-to-face tuition, whereas a majority want less television broadcasts. (However, most students also want more use of video recordings.) Student opinion would, then, seem to favour some shift from television to face-to-face tuition. A similar finding is reported by Swift and Kelly (1983), who found that only 29% of their sample were against the idea of fewer TV broadcasts and more tutor contact.

Television Versus Audio-Vision

Yet another interesting comparison can be made between television and audio-vision (i.e. audio-cassettes plus visuals). The BBC/OUP produces about 130 hours of audio material (radio and audio-cassettes) at a cost of £0.88 million (10% of the BBC/OUP budget less the cost of radio broadcasting), i.e. about £6,700 per hour of audio material. This should be compared to the average production cost of about £82,000 for one hour of television material. Distribution costs for audio-cassettes are £0.50 per student per hour of audio material, as compared to a broadcast distribution cost of £3.20 per student per hour of television material in a post-foundation course with 500 students (with repeat broadcasts). Assuming a 'life-span' of six years for the material, the combined production and distribution cost per hour of material per student per year (in a PF course with 500 students) is £2.75 for audio material and £30.50 for television material. We can then allow up to £10 per student per year for the provision of accompanying visuals (print, slides or film-strips) and the cost of audio-vision would still be less than half that of television.

Costs of providing visuals for audio-vision can, of course, vary enormously, but some figures for print costs can be illustrative. Using recent print costs for A315 ('Colour Book 1' with art reproduction, and black and white plates for Block 4) as a guide one can estimate print costs for 3,000 copies of a 20 page booklet accompanying a cassette as follows:

	Total	Per copy
Full colour on glossy paper	£11,500	£3.85
Single colour on ordinary paper	£1,800	£0.60

Even with the most expensive print this would still leave some £18,500 out of the total allowance assumed here of £30,000 (£10 per student) to cover the costs of creating or obtaining the originals for the visuals. It is also worth noting that full colour visuals can be provided more cheaply through slides or film strips than through colour prints. So it should not normally present any difficulty to keep the cost of the visuals in an audio-vision package at or below £10 per student. In fact, the cost could in, many cases, be considerably less.

It seems then that the cost of the more expensive audio-vision packages are unlikely to be more than half that of the corresponding television programme, and the cost of the less expensive packages is likely to be less than a quarter of the corresponding television cost. If we then take into account that a package with one hour of audio material (playback time) plus visuals usually results in three 'student-medium contact hours' (as against no more than 1½ student-medium contact hours per hour playback time for television) we find that television is likely to be at least five times as expensive as audio-vision in terms of cost per student-medium contact hour in courses recruiting around 500 students a year.

A cost-effectiveness analysis must, of course, take into account the value to the student of each type of material. If an hour of televsion material is several times as 'valuable' of 'beneficial' to the students as an hour of 'audio-vision' material, then television is more cost-effective in spite of it seeming so expensive. Also, if only television can provide a certain minimum of benefit which is judged essential to the students, we would have to conclude that audio-vision is not sufficiently effective and therefore, strictly speaking, not at all 'cost-effective'.

We do not have any direct measures of the relative benefit to the students of television or audio-vision (or any other course component). We do have feedback regarding their perceived helpfulness to the students, and this suggests that, on average, audio-vision is perceived as more helpful than television by OU post-foundation course students. Judging by this kind of student feedback, the conclusion is, then, that audio-vision is, in most cases, much more cost-effective than television.

Media Selection in a Cost-Benefit Perspective

I have discussed the costs of television and presented a very tentative cost-benefit analysis. The overall impression is that the cost of broadcast television in post-foundation courses is high and the benefits, as perceived by the students, moderate. Consequently, continuous expenditure on post-foundation course television at the current high level may not be justifiable.

At a time when the University has to reduce its overall expenditure, finding a cost-effective 'media mix' becomes particularly important. An improved 'media mix' for the University as a whole is, in my opinion, likely to contain significantly less television broadcasts than at present. However, it is not clear whether expenditure on audio-visual media generally ought to be reduced. The need to question the expenditure on television 'as we know it' should not lead to a general rejection of audio-visual media.

To conclude that television is less cost-effective than, say, audio-vision does not say anything about the cost-effectiveness - or the effectiveness - of various other OU 'media'. Home experiment kits, for example, can be very costly and it is not at all clear whether the benefit students derive from them usually justify the costs.

It is possible to arrive at an overall ranking of OU course 'media' on the basis of their 'helpfulness' as perceived by students. Such a ranking is given in table 7, which is based on data for all new courses in the period 1980-82. Television appears in the lower half of this table, but it is nevertheless rated significantly higher than home experiment kits.

Table 7 does not show the considerable variations from course to course in these ratings. At its best television is rated as highly as any other components. If we look at the ratings for new courses in 1982 we find that the highest television rating (4.00 for S341) is higher than the lowest rating for text units (3.80 for T252), and also higher than the average ratings for all other components, including the normally highly rated Summer School and set books.

We can also look at student demand for more or less of various 'media' or course components. Table 8 shows average demand for selected media across all new courses in 1982. (Questions about demand were not included in earlier years.) The only things a substantial majority of students want more of are

face-to-face tuition, and
video recordings,

whereas television broadcasts are among the things most students want somewhat less off.

What we know about student use and appreciation of various media must, of course, be taken into account in our media selection. But before any long term media policy is formulated we will also need to look closely at the costs of each medium and the amount of time students normally spend on it. This information will then have to be considered in relation to our conceptions of the educ educational values of each particular medium. And, as has been pointed out earlier, before we at all consider the cost-effectiveness of any aspects of our courses, we need to establish that our use of various media is effective. That is, we have to convince ourselves that a sufficient proportion of the target population derive an 'acceptable minimum' of benefit from each particular medium. If a minimum acceptable effectiveness is not achieved, the cost-effectiveness is by definition absolutely nil.

Table 7 Average helpfulness ratings in various 'media' across all new courses in the period 1980-1982

'Medium'	Mean Rating
Text units	4.62
Summer School	4.08
Set books	3.97
Day schools	3.79
TMA comments	3.76
Self-help groups	3.69
Study-centre tutorials	3.68
Audio-cassettes	3.65
Individual telephone tutoring	3.52
Television	3.46
Broadcast notes	3.35
Home experiment kits	3.32
Recommended reading	3.29
Group telephone tutoring	3.21
Radio	3.17

Table 8 Demand for selected media across OU new courses in 1982

'Medium'	Demand Index
Face-to-face tuition	.60
Videorecordings	.44
Broadcast notes	.08
text units	.03
Audio-cassettes/records-discs	.03
Home-experiment kits	-.02
Computer practicals	-.04
TMA comments	-.08
Television boradcasts	-.14
Set books	-.19
Radio broadcasts	-.27

Note: 'Demand index' is derived from the following scale:

2 = a lot more
1 = some more
0 = no change
-1 = some less
-2 = a lot less
-3 = nothing at all

Recommendations

The findings and conclusion presented in the report have led to the following recommendations, which can be acted upon immediately or in the near future:

- repeat transmission of post-foundation course television programmes are not sufficiently cost-effective and should be discontinued;

- the use of video recordings of television programmes should be actively encouraged and supported, e.g. through the Video-Cassette Loan Service;

- distribution of audio material through radio broadcasting is not sufficiently effective and should be replaced by audio-cassette distribution for all courses (this will greatly improve the effectiveness of distribution at a modest extra cost).

Further recommendations, which will need more time for their implementation, are:

- a shift should be made towards significantly reduced use of television broadcasts and increased use of video cassettes, particularly at post-foundation level;

- before resources for either television broadcasts or video cassettes are allocated the possibilities of achieving the educational objectives in question through audio-vision should be carefully examined;

- the possibilities of providing 'low cost' video material for post-foundation courses should be explored;

- the full costs, as well as the marginal costs, of providing various media should be estimated for different types of courses;

- commonly acceptable criteria for assessing the benefits to students of various media should be developed;

- guidelines for media selection (incl. print media) should be developed based upon cost-benefit analyses of a wide variety of media.

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COURSES IN THE 1982 A V MEDIA SURVEY

Appendix I

Course Code	Course Title
A101	An arts foundation course
A203	Seventeenth century England: a changing culture 1618-1689
A204	The Enlightenment
A241	Elements of music
A292	Greece 478-336 BC
*A293	Rome: the Augustan Age
A305	History of architecture and design 1890-1939
A306	Twentieth-century poetry
A308	The rise of modernism in music 1890-1935
A309	Conflict and stability in the development of modern Europe c. 1789-1970
*A312	The nineteenth century novel and its legacy
A313	Philosophical problems
A322	English urban history 1500-1780
A351	Modern art from 1848 to the present: styles and social implications
A352	Art in Italy 1480-1580
A381	Science and belief: from Darwin to Einstein
AD208	Man's religious quest
AM289	History of mathematics
*D102	Social Sciences: a foundation course
*D202	Urban change and conflict
D204	Fundamentals of human geography
D207	An introduction to sociology
D222	Microeconomics
D232	Comparative politics
D233	World politics
D284	National income and economic policy
D291	Statistical sources
D301	Historical sources and the social scientist
D303	Cognitive psychology
D305	Social psychology
D324	Business economics
*D334	Soviet Politics
D336	Policies, people and administration
DE206	Social work, community work and society
DS262	An introduction to psychology
E200	Contemporary issues in education
E201	Personality and learning
E202	Schooling and society
*E241	Special needs in education
E323	Management and the school
*E354	Ethnic minorities and community relations
E362	Cognitive development: language and thinking from birth to adolescence
*E364	Curriculum evaluation and assessment in educational institutions
M101	Mathematics: a foundation course
M203	Introduction to pure mathematics
*M252	Computing and computers
M333	Aspects of abstract algebra
M335	Studies in pure mathematics
M341	Fundamentals of statistical inference
M351	Numerical computation
M352	Computer-based information systems
MDT241	Statistics: an interdisciplinary approach
MS283	An introduction to calculus
*MST204	Mathematical models and methods

*New Course

Course Code	Course Title
P251	The handicapped person in the community
PE231	Reading development
PE232	Language development
*PME233	Mathematics across the curriculum
PT281	Industrial relations
S101	Science: a foundation course
S202	Biology: form and function
S237	The Earth: structure, composition and evolution
S246	Organic chemistry
S247	Inorganic chemistry: concepts and case studies
S266	The Earth's physical resources
*S271	Discovering physics
S323	Ecology
S334	Oceanography
S335	Surface and sedimentary processes: case studies in earth science
S336	Crustal and mantle processes: case studies in earth science
*S341	Photochemistry: light, chemical change and life
S354	Understanding space and time
S364	Evolution
SD286	Biology, brain and behaviour
SM351	Quantum theory and atomic structure
SM352	Electromagnetism
ST291	Images and information
T101	Living with technology: a foundation course
T232	Engineering mechanics: solids
*T233	Thermofluid mechanics and energy
T241	Systems behaviour
*T243	Systems organization: the management of complexity
*T252	Materials engineering: an introduction
T273	Food production systems
T283	Introductory electronics
T291	Instrumentation
T321	Telecommunications systems
T352	Materials processing
TAD292	Art and environment
TD342	Systems performance: human factors and systems failures
TM281	Modelling by mathematics
TM361	Graphs, networks and design
U201	Risk
U202	Inquiry
*U203	Popular culture

*New Course